

RUBINSHTEYN, I. S.; SHCHEDRINSKAYA, Ye. M.; FRID, M. A.; ZIBITSKER, D. Ye.

"Cases of Colibacillosis in Newborn Children," Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 1, 1953.

Belorussian Institute of Epidemiology and Microbiology

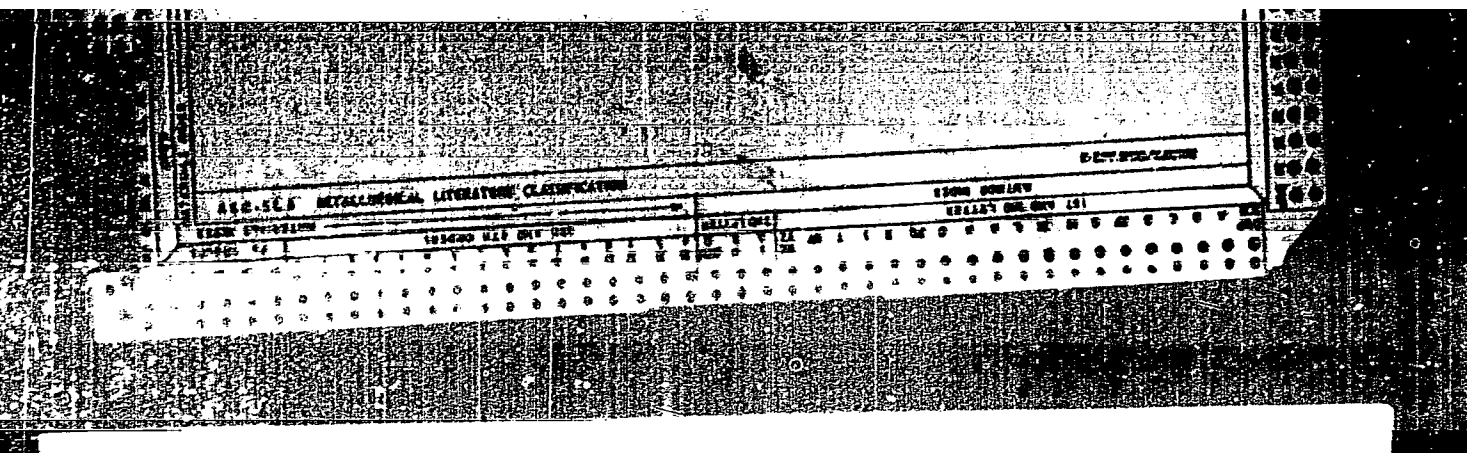
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116

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Purification and concentration of diphtherial toxins and anatoxins. I. S. Kakhmanichik, S. M. Sosina and G. I. Kakhmanichik. *Z. Microbiol. Epidemiol. Immunid.-forsch.* (U. S. S. R.) 1941, No. 1, 18-20 (in German, 20-7). —Expts. were made to det. whether acids can be used for the purification and concn. of toxins and anatoxins, to find the most suitable acids for this purpose and to det. optimum conditions for purifying the toxins and anatoxins with a max. preservation of their antigenic properties. HCl, AcOH and CCl₃COOH were used. Under production conditions HCl produced optimum results. The optimum conditions of antigenic properties de-purification and preservation of antigenic properties depend on the pH value and there is a definite pH value for each acid. With HCl the optimum pH is 3.8 both for purification and for preservation of the antigenic power for both toxin and anatoxin. With CCl₃COOH the optimum for toxin is pH 3.5 and for anatoxin pH 3.8. Toxins and anatoxins were freed from inactive proteins to the extent of 95-7% and 91-6% of the antigenic power was preserved. W. R. Henn

1ST AND 2ND ORDER										3RD AND 4TH ORDER									
PROCESSES AND PROPERTIES INDEX																			
CA										17									
Preparation of placental extract and its prophylactic properties. I. S. Rubinshtein, M. Sh. Levin and S. M. Sosna. <i>Z. Mikrobiol. Epidemiol. Immuninfektforsch.</i> (U. S. S. R.) 1969, No. 1, 21-9 (in German, 29).—Ext. placenta with 2% NaCl for 48 hrs. in a refrigerator, filter through a Büchner funnel, centrifuge, adjust the pH to 1.1-1.2 by adding N HCl, let stand for 48 hrs. at room temp., and filter through an ordinary Seitz filter. The product contains dry residue 6.0, N according to Kjeldahl 0.88, proteins according to the refractometric data 5.5, fat none, sugar 0.074, ash 1.4, K 0.007 and Ca 0.007. Preliminary clinical data indicate that placental ext. can be used in pediatric practice and can replace human blood. W. R. Henn. Thirteen references.																			
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION																			
1ST ORDER										2ND ORDER									
1ST ORDER										2ND ORDER									



RUBINSHTEYN, L. (Kazan')

In the quest for souvenirs. Prom.koop. no.10:14-15 0 '56. (MIRA 9:11)
(Tatar A.S.S.R.--Folk art)

RUBINSKITEYN, L.

Original art. Promkcom. no.8:18 Ag '57. (MIRA 10:9)
(Przhetslavskaja, Elena Ivanovna)

RUBINSHTEYN, I.

School of folk art. Prom.koop. no.4:14-15 Ap. '57. (MLRA 10:7)
(Art industries)

RUBINSHTYN, L.

Vasilii Sokov [Vasilii Sokov]. Moskva, Izd-vo Fizkul'tura i sport, 1952. 128 p.

SO: Monthly List of Russian Accessions, Vol 6 No 4, July 1953

RUBINSHTEYN, L.

Behind the bamboo curtains. Mest.prom.i khud.promys. 2 no.10:
39 0 '61. (MIRA 14:11)

(Moscow--Exhibitions)
(China--Toys)

RUBINSHTEYN, L.

"Six golden nests" by IU. Arbatov. Reviewed by L. Rubinshtein.
Mest.prom. 1 khud.promys. 2 no.12:38 D '61. (MIRA 14:12)
(Moscow Province—Folk art)
(Arbatov; IU.)

RUBINSHTEYN, L.

"Russian wood carving; album." Reviewed by L.Rubinshtein. Mest.-
prom.i khud.promys. 3 no.4:38 Ap '62. (MIRA 15:5)
(Wood carving, Russian)

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 219 (USSR) SOV/124-58-11-13501

AUTHOR: Rubinshteyn, L. M.

TITLE: On the Work-hardening and the Ultimate Ductility of Materials (Ob uprochnenii i predel'noy plastichnosti materialov)

PERIODICAL: Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t, 1957, Nr 8, pp 70-72

ABSTRACT: The work is performed to demonstrate the proposition, at times contradicted (Pashkov, P. O., Zh. tekhn. fiz., 1955, Vol 25, Nr 6, pp 1162), that in the course of the formation of a contracted neck on a specimen subjected to tension the principal factor in the work-hardening is the physical aspect thereof and that the change of shape as such plays only a small part therein. It is shown, by means of repeated annealing at various stages of the necking in of a specimen and renewed measurement at each stage of the new yield point, that the shape-conditioned strengthening is quite insignificant and that it does not exceed 10-12 percent. Upon imparting to the specimen a neck (by turning) of cylindrical shape (with long transition tapers) it was shown that a new neck is formed in the tapered portion at

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On the Work-hardening and the Ultimate Ductility of Materials SOV/124-58-11-13501
stresses which are 60 percent smaller than those obtaining in the initial neck;
this indicates a substantial physical strengthening (work hardening).
N. N. Davidenkov

Card 2/2

RUBINSHTEYN, L.M.

Measuring longitudinal strains. Trudy LPI no.197:128-131 '58.

(MIRA 13:3)
(Strains and stresses) (Tensiometers)

68799

18.8200

SOV/126-8-1-17/25

AUTHORS: Shevandin, Ye.M., Kurdyukova, L.F. and Rubinshteyn, L.M.

TITLE: Influence of Stress Concentrations^b on the Fatigue^{1b} Resistance of Steel

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 1, pp 122-129 (USSR)

ABSTRACT: In this paper the change in fatigue resistance of steel with increase in notch sharpness (decrease in radius at the notch bottom) was studied. Hot rolled sheet, 10-12 mm thick, of steels St.3, 20G, 30G and SKS-1 (see table on p 122) were studied. The specimens were made from sheet along the rolling direction. Tests were carried out by tension-compression and by cyclic bending. Centring of the specimen for tension-compression in the pulsator was brought about by special grips. In bending tests the centring of the specimens was ensured by the construction of the tongs of the testing machines and the appropriate positioning of the specimens. The amplitude of pulsation did not exceed 0.01-0.02 mm. Smooth specimens were used for tension-compression and bend tests (Figs 1 and 2). The radius at the bottom of notched specimens in tension-compression tests varied within the limits 2.5-0.05 mm, and for bend tests from 3.0-0.1 mm. The specimens for

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Steel

Influence of Stress Concentrations on the Fatigue Resistance of

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SOV/126-8-1-17/25

the tension-compression tests were made by a special technique and the symmetry of the dimensions relative to the axis was accurate within ± 0.01 mm. Graphs characteristic for the essential dependence of fatigue resistance of steel on the stress concentration in the tension-compression and in bending are shown within the coordinates endurance-stress concentration coefficients, and also within the coordinates endurance limit-reciprocal of the notch bottom radius $\frac{1}{\rho}$ (mm^{-1}). Results of tension-compression tests are shown in Figs 3 and 4. Those obtained for bending are characterized by the same curves, hence they are shown only in a comparison diagram in Fig 5. Fig 6 shows the dependence of the endurance limit, as determined in tension-compression, for notched specimens (steel St.3) on the eccentricity, according to theoretical and experimental data; 1 - experimental curve; 2 - theoretical curve. Fig 7 shows the dependence of the coefficient of notch sensitivity on the radius of the notch bottom, for various steels. Fig 8 shows the

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Influence of Stress Concentrations on the Fatigue Resistance of Steel

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SOV/126-8-1-17/25

dependence of the coefficient of notch sensitivity on the temporary resistance ($\sigma = 0.5$ mm); 1 - specimens cut along the rolling direction; 2 - specimens cut at right-angles to the rolling direction. The authors have arrived at the following conclusions:

1. As the sharpness of the notch and the coefficient of stress concentration in bending as well as in tension-contraction increases, a decrease in fatigue resistance occurs in carbon and low alloy steels, which reaches a minimum, after which it remains unchanged with further increase in notch sharpness.
2. The largest notch bottom radius corresponding to the extreme value of fatigue resistance may be called the limiting one for specimens having a cross-sectional area of 30-60 mm²; it has a value of approximately 0.3 mm both in bending and in tension-contraction.
3. The above characteristics apply to the endurance limit of any base.
4. A stress gradient leads to a rise in fatigue resistance for bending as compared with tension-contraction.

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Influence of Stress Concentrations on the Fatigue Resistance of Steel

5. The coefficient of notch sensitivity increases with increase in strength of the steel.
 6. The notch sensitivity increases with increase in notch bottom radius, and this increase is particularly pronounced in the case of small radii.
 7. The notch sensitivity at a given strength is greater in specimens cut along the direction of rolling than in those cut at right-angles to this direction. This is due to the anisotropy in grain size; in the first case the grain size is relatively finer.
- There are 8 figures, 1 table and 11 references, 5 of which are Soviet, 3 English and 3 German.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut imeni Akad. A.N. Krylova (Central Scientific Research Institute imeni Acad. A. N. Krylov) ✓

SUBMITTED: July 31, 1957

Card 4/4

RUBINSHTEYN, L. I.

Rubinstein, L. I. On the solution of Stefan's problem.
Bull. Acad. Sci. URSS. Sér. Géograph. Géophys. [Izvestia
Akad. Nauk SSSR] 11, 37-54 (1947). (Russian. Eng-
lish summary)

A method for the solution of Stefan's problem for the case
of a finite linear conductor is given. The equations of the
problem are $u_{xx} = u$, $0 < x < y(t)$; $u = a^{-1}v$, $y(t) < x < 1$;
 $u(0, t) = f_1(t)$, $u(y(t), t) = v(y(t), t) = 0$, $v(1, t) = f_2(t)$.
 $u(x, 0) = u_0(x)$, $v(x, 0) = v_0(x)$.

Source: Mathematical Reviews,

Vol 8 No. 5

H. P. Thielman (Ames, Iowa)

RUBINSHEIN, I. I.

USSR/Geophys
Soil Sci

Nov-Dec 1947

"Process of Freezing of Soil," I. I. Rubinsheyn,
64 pp

"Izv Akad Nauk SSSR, Ser Geograf i Geofiz" Vol XI,
No 6

Author discusses the freezing of soil having moisture content, in particular, this freezing under conditions when moisture of the soil is at various freezing temperatures, in event of unlimited space that is under extreme conditions as set up by Stefan. States that question of change of temperature with relation to the change of aggregate composition of the soil was

USSR/Geophys (Contd)

Nov-Dec 1947

taken up in another article, "Question of the Processes of Distribution of Heat in Heterogeneous Materials." Submitted by I. S. Leybenzon, 12 Jan 1946.

RUBINSHTEYN, L. I.

Rubinstein, L. I. On the determination of the position of the boundary which separates two phases in the one-dimensional problem of Stephan. Doklady Akad. Nauk SSSR (N.S.) 58, 217-220 (1947). (Russian)

This paper gives another method for the solution of the problem which was studied by the author in an earlier paper

[Bull. Acad. Sci. URSS. Sér. Géograph. Géophys. [Izvestia Akad. Nauk SSSR] 11, 37-54 (1947); these Rev. 8, 516]. The problem is reduced to the solution of a system of integral equations which is solved by the method of successive substitutions. The uniqueness of the solution is estab-

RUBINSHTEYN, L. I.

"The Process of Heat Diffusion in Heterogeneous Media," Iz. Ak. Nauk SSSR,
Ser. Geog. i Geofiz., 12, No.1, 1948
Inst. Theoretical Geophys., AS USSR

Rubinshteyn, L. I. On the stability of the boundary of the phases in a two-phase heat-conducting medium. *Izvestiya Akad. Nauk SSSR. Ser. Geograf. Geofiz.* 12, 557-560 (1948). (Russian)

It is shown that in the two-phase linear heat-conduction problem of Stefan the position of the boundary is a continuous function of the boundary values and also of the thermal constants which characterize the conducting medium. The proof applies to the case when at the initial moment both the liquid and solid phases exist, and is based on the proof for the existence and the uniqueness of the solution of the problem which was given by the author in earlier papers [*Bull. Acad. Sci. URSS. Sér. Géograph. Géophys.* [*Izvestia Akad. Nauk SSSR*] 11, 37-54 (1947); *Doklady Akad. Nauk SSSR (N.S.)* 58, 217-220 (1947), these *Rev.* 8, 516-9, 287].

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Source: Mathematical Reviews

Vol 10 No 1

Page 1

APPROVED FOR RELEASE: 08/22/2000

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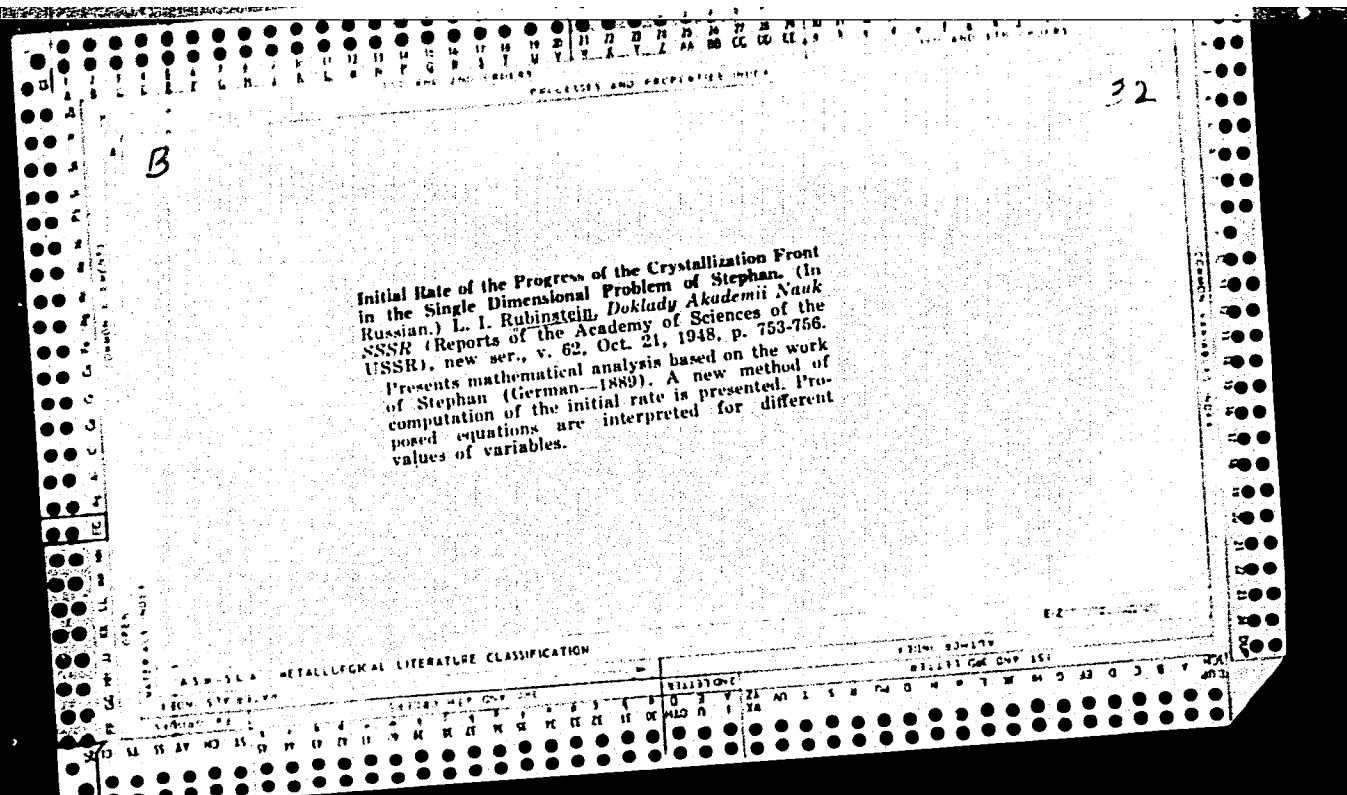
USSR/Mathematics - Equations, Differential Sep 48
Physics
Latent Heat

"The Existence of a Solution for Stefan's Problem,"
L. I. Rubinshteyn, Vologda State Pedagogical Inst
Imeni V. M. Molotov, 4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 2

Proves the existence of solutions for five
differential expressions representing Stefan's
problem, concerning the linear expansion of a body
accompanied by the release of the latent heat of
fusion. Submitted by Acad S. L. Sobolev, 14 Jul 48.

36/49T22



Submitted by: On a hydrodynamical problem. Doklady
Russian

Author: Y. I. Izrael
Institution: Academy of Sciences of the USSR

Subject: Hydrodynamics
Keywords: Hydrodynamics

Abstract: On a hydrodynamical problem.

Annotation: Hydrodynamics

Summary: Hydrodynamics

of International Reviews.

Vol. II No. 4

RUBINSHTEYN, L. I.

Rubinstein, L. I. On the asymptotic behavior of the phase separation boundary in the one-dimensional problem of Stefan. Doklady Akad. Nauk SSSR (N S.) 77: 37-40 (1981). (Russian)

The author considers the asymptotic behavior of the phase separation boundary in the one-dimensional problem of Stefan for a cylinder in the case when radiation from one end of the cylinder takes place according to Newton's law. The solution of this problem for the case of small time intervals can be obtained from a system of integral equations as was shown by the author in earlier papers [same Doklady SSSR, 58, 217-220 (1947), these Rev. 9, 287]. The present paper establishes a method for the extension of the solution

Rubinstein, L. I. On the uniqueness of solution of the homogeneous problem of Stefan in the case of a single-phase initial condition of the heat conducting medium. Doklady Akad. Nauk SSSR (N.S.) 70, 45-47 (1951). (Russian)

The following theorem is proved: Let $u_i(x, t)$, $y_i(t)$ be two systems of solutions of the problem of Stefan:

$$\frac{\partial^2 u_i}{\partial x^2} = \frac{\partial u_i}{\partial t} \quad (0 < x < y_i(t)); \quad \frac{\partial^2 u_i}{\partial x^2} = \frac{\partial u_i}{\partial t} \quad (y_i(t) < x < 1),$$

$$u_{i1}(0, t) = f_1(t) \leq 0; \quad u_{i2}(y_i(t), t) = 0; \quad u_{i2}(1, t) = f_2(t) \leq 0,$$

$$u_{i2}(x, 0) = \varphi_i(x); \quad (\varphi_1(x) \leq 0, \varphi_2(x) \geq 0);$$

$$\frac{dy_i}{dt} = \frac{\partial u_i}{\partial x} - \frac{\partial u_{i2}}{\partial x} \bigg|_{x=y_i(t)}; \quad y_i(0) = y_i(0, 1] \quad (i=1, 2).$$

Then $t=0$ appears as an accumulation point of the zeros of the difference $z(t) = y_1(t) - y_2(t)$. The proof is based on the principle of the maximum for subparabolic functions and from this proof it follows that there does not exist two systems of solutions of the problem of Stefan in which the boundary separating the phases are analytic functions of t .

C. G. Maple, Washington, D. C.

Good

Ref 27

SSS

Source: Mathematical Reviews,

Vol 13 No. 3

RUBINSHTEYN, L. I.

Rubinshtein, L. I. On the propagation of heat in a stratified medium with varying phase state. Doklady Akad. Nauk SSSR (N.S.) 70, 221-224 (1951). (Russian)

The linear heat conduction problems for a stratified medium with a fixed number of phase states is put into a more general form than has occurred in earlier mathematical literature. The author states that the method used by him for the solution of Stefan's problem [Doklady Akad. Nauk SSSR (N.S.) 58, 217-220 (1947); these Rev. 9, 287] can be extended to the more general problem stated here.

H. P. Thielman (Ames, Iowa).

DMW
JST

Source: Mathematical Reviews,

Vol 13 No. 2

RUBINSHTEYN, L. I.

Rubinshtein, L. I. On the propagation of heat in a two-phase system having cylindrical symmetry Doklady Akad. Nauk SSSR (N.S.) 79, 943-948 (1971).

In this note the cylindrical problem of Stefan is considered under the hypothesis that there exists an axial symmetry. The method of solution and the proof of uniqueness are essentially the same as those for the linear problem of Stefan as given by the author in an earlier paper [same Doklady 58, 217-220 (1947); these Rev. 9, 187].

H. P. Threlman (Ames, Iowa)

Source

Source: Mathematical Reviews,

Vol 13 No.3

RUBINSHTEYN, L.I.

The dynamics of evaporation of liquid mixtures that obey Raoult's law: L. I. Rubinshtein (Turkmenian Branch All-Union Sci. Research Inst., Nebit-Dag). *Doklady Akad. Nauk S.S.S.R.* 87, 357-60(1952).—Math. The dynamics of the evapn. are treated on the basis of the following stipulations: the process of evapn. is quasi-stationary; during the time of evapn. the soln. remains homogeneous, a condition brought about by intensive agitation; the evapn. proceeds from the deepest layer in the soln.; all along a plane; for each of the components the ideal gas law is valid; the process of evapn. is isothermal, the material is evapd. into the atm., and the partial pressure of the air during all the time remains const., as well as the draft that carries off the vapors. It is not always necessary that the vols. of the components, upon formation of the mixt., be additive. 62

Werner Jacobson

RUBINSHTEYN, L. I.
RUBINSHTEYN, L. I.

The dynamics of evaporation of ideal multicomponent
and mixtures. L. I. Rubinshteyn (Turkmenian Branch
All-Union Sci. Research Inst., Nchit-Dag). *Doklady Akad.
Nauk S.S.S.R.* 90, 987-990 (1953) (Engl. translation issued
as U.S. Atomic Energy Comm. NSR-tr-129, 4 pp. (1953)).—A
math. study of the 3-dimensional case is presented assuming:
vapor mixing by diffusion only, uniform liquid phase during
the process, small thickness of the evap. layer as compared
to the linear dimensions of the evapn. surface. With these
assumptions, the problem is reduced to a composite boundary
problem of heat conduction. Set up in a region with fixed
boundaries, it can be solved by reduction to a system of
integral equations by the usual methods in the theory of
heat conduction.

John T. Cumming

②

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10/18/54

U S S R 4

On the 4-11-61
solution of

SUBJECT USSR/MATHEMATICS/Differential equations CARD 1/1 PG - 169
 AUTHOR RUBINSTEJN L.I.
 TITLE On the determination of the boundary surface between two phases
 of a heat conducting medium for a stationary state of heat.
 PERIODICAL Doklady Akad. Nauk 105, 437-438 (1955)
 reviewed 7/1956

Two circles Σ_0 and Σ_1 bound a ring domain. On Σ_0 there is a given variable positive temperature (not frozen earth), on Σ_1 there is a given variable negative temperature (frozen earth). The phase boundary Σ (temperature = 0) and continuous harmonic functions u_0 and u_1 are sought which satisfy the given boundary conditions and the relation

$$\lambda_0 \frac{\partial u_0}{\partial n} = \lambda_1 \frac{\partial u_1}{\partial n},$$

(λ_0, λ_1 - constants, $\frac{\partial}{\partial n}$ - differentiation with respect to the normal to Σ).

A **APPROVED FOR RELEASE: 08/22/2000** is reduced to the Dirichlet problem
 CIA-RDP86-00513R001445820010-6"

INSTITUTION: Branch of the scientific research institute for questions of oil and gas of the USSR, Krasnodar.

Rubinshteyn, L. I.

124-1957-10-11791

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 10, p 87 (USSR)

AUTHOR: Rubinshteyn, L. I.

TITLE: To the Determination of the Location of the Division Boundary of Two Slightly Compressible Fluids Seeping Through a Deformable Porous Medium (Ob opredelenii polozheniya granitsi razdela dvukh maloszhimayemykh zhidkostey, fil'truyushchikhsya cherez deformiruyemuyu poristuyu sredu)

PERIODICAL: Sb. tr. Ufimsk. nef. in-ta, 1956, Nr 1, pp 75-108

ABSTRACT: Proof is offered for a theorem on the existence and the singularity of the solution of the following boundary-value problem:

see equations on Card 2/3

Card 1/3

124-1957-10-11791

To the Determination of the Location of the Division Boundary (cont.)

$$\begin{aligned} \frac{\partial^2 p_1}{\partial \xi^2} &= \frac{\partial p_1}{\partial \tau} \quad \text{if } -\infty < \xi < y(\tau) \\ a^2 \frac{\partial^2 p_2}{\partial \xi^2} &= \frac{\partial p_2}{\partial \tau} \quad \text{if } y(\tau) < \xi < 0 \\ p_i \Big|_{\tau=0} &= \varphi_i(\xi) \quad (i=1, 2), \quad \frac{\partial p_2}{\partial \xi} \Big|_{\xi=0} = \psi(\tau) \\ p_1 \Big|_{\xi=y(\tau)-0} &= p_2 \Big|_{\xi=y(\tau)+0} \\ \lambda \frac{\partial p_1}{\partial \xi} \Big|_{\xi=y(\tau)-0} &= \frac{\partial p_2}{\partial \xi} \Big|_{\xi=y(\tau)+0} \\ \frac{\partial y}{\partial \tau} &= - \frac{\partial v_1(y(\tau), \tau)}{\partial \xi} \quad y(0) = -1 \end{aligned}$$

Card 2/3

124-1957-10-11791

To the Determination of the Location of the Division Boundary (cont.)

Functions $\varphi_i(\xi)$ ($i = 1, 2$) are regarded as being continuously differentiable three times and the $\psi(\tau)$ twice throughout the region in which they are being determined. This boundary-value problem is the result of reducing the problem of the determination of the division boundary between two slightly compressible fluids seeping through a deformable porous medium, such as the problem of determining the location of the water-petroleum contact surface in a homogeneous petroliferous layer exhibiting an elastic regimen in a uniform seepage process. It is necessary to determine the functions of the pressure p_1 and p_2 and the division boundary $\xi = y(\tau)$. Through the application of Green's functions the boundary-value problem reduces to a system of integral equations, which are solvable by the method of successive approximations. The singularity of the solution obtained is demonstrated, together with the fact of its equivalence to the solution of the original boundary-value problem under the condition that τ is sufficiently small.

G.S.Salekhov

Card 3/3

RUBINSHTEYN. L. I. Doc Phys-Math Sci -- (diss) "On certain non-linear problems
~~generated by~~
~~resulting from~~ Fourier's equation#." Mos, 1957. 12 pp 22 cm. (Mos State U, in
M. V. Lomonosov), 100 copies (KL, 14-57, 85)

RUBINSHTEYN, L. I.

AUTHOR:

RUBINSHTEYN, L. I.

PA - 2645

TITLE:

On the Solution of Verigin's Problem. (O reshenii zadachi N.N. Verigina, Russian)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 1, pp 50 - 52 (U.S.S.R.)

Received: 5 / 1957

Reviewed: 6 / 1957

ABSTRACT:

The problem raised by N.N. Verigin (Izv. Akad. Nauk SSSR, Otdel. tekhn. nauk, Nr 5 (1952) is to the known Stefan problem in the same relation as the ordinary two-layer thermal problems to the ordinary one-layer problem. The problem by N.N. Verigin is one of the few (among the problems of this kind) that permit an automodel-like solution. In the general case special methods have to be developed for the solution of the Verigin problem. The present work undertakes this task for the Verigin problem in the following manner:

$$\delta^2 p_1 / \delta \xi^2 = \delta p_1 / \delta \tau \quad \text{at } -\infty < \xi < y(\tau), \tau > 0$$

$$a^2 \delta^2 p_2 / \delta \xi^2 = \delta p_2 / \delta \tau \quad \text{at } y(\tau) < \xi < 0, \tau > 0$$

$$p_1|_{\tau=0} = \varphi_1(\xi) \quad (i = 1, 2); \quad \delta p_2 / \delta \xi|_{\xi=0} = \psi(\tau)$$

$$p_1|_{\xi=y(\tau)-0} = p_2|_{\xi=y(\tau)+0}; \quad \lambda (\delta / \delta \xi) p_1|_{\xi=y(\tau)-0} = (\delta / \delta \xi) p_2|_{\xi=y(\tau)+0};$$

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PA - 2645

On the Solution of Verigin's Problem.

$$\delta y / \delta T = -(\delta p_1 / \delta \xi) \Big|_{\xi} = y(T); \quad y(0) = -1$$

The computations are followed step by step. Hereby an integral equation of the Abel type is obtained. The resulting system of equations obtained by means of transformations is solved by the method of successive approximations. In conclusion, the equivalence of the solution found here by means of transformations is proved with the solution of the original problem. (no illustrations)

ASSOCIATION: Krasnodar Branch of the All-Soviet Scientific Research Institute
for Mineral Oil and Gas.
PRESENTED BY: S.L.Sobolev, Member of the Academy.
SUBMITTED: 22.9.1956
AVAILABLE: Library of Congress.

Card 2/2

Rubinshteyn, L. I.

20-3-9/52

AUTHOR: Rubinshteyn, L. I.

TITLE: On the Problem of the Uniqueness of the Solution of Stephan's Onedimensional Problem in the Case of a One-Phase Initial State of the Heat-Conducting Medium
(K voprosu ob yedinstvennosti resheniya odnomernoy zadachi Stefana v sluchaye odnofaznogo nachal'nogo sostoyaniya teploprovodyashchey sredy).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 3, pp. 387-390 (USSR)

ABSTRACT: The present paper investigates the following problem:

$$\frac{\partial^2 U_1}{\partial x^2} = \frac{\partial U_1}{\partial t}; 0 < x < y(t); a^2 \frac{\partial^2 U_2}{\partial x^2} = \frac{\partial U_2}{\partial t}; y(t) < x < 1$$

$$U_1(0, t) = f_1(t) \leq 0; U_2(x, 0) = \varphi(x) \geq 0; U_2(1, t) = f_2(t) \geq 0;$$

$$U_1(y(t), t) = U_2(y(t), t) = 0; \frac{dy}{dt} = \frac{\partial}{\partial x} U_1(y(t), t) - \frac{\partial}{\partial x} U_2(y(t), t);$$

Card 1/2 $y(0) = 0$. Two restricting conditions for $f_1(t)$ and $\varphi(x)$

On the Problem of the Uniqueness of the Solution of Stephan's 20-3-9/52
Onedimensional Problem in the Case of a One-Phase Initial
State of the Heat-Conducting Medium

are given. The author then proves, while maintaining his conditions of his previous works (ref. 1) the uniqueness of the solution of the above mentioned problem. The rather complicated proof is carried out step by step. There are 8 references, 6 of which are Slavic.

ASSOCIATION: Ufa Mineral Oil Institute, Chernikovsk, Bashkir ,
SSR (Ufimskiy neftyanoy institut g.Chernikovsk BashSSR)

PRESENTED: May 31, 1957, by S. L. Sobolev, Academician

SUBMITTED: September 17, 1956

AVAILABLE: Library of Congress

Card 2/2

AUTHOR: Rubinshteyn, L.I.

SOV/140-58-4-22/30

TITLE: ~~On the Question on the~~ Numerical Solution of the Integral Equations of the Stephan's Problem (K voprosu o chislennom reshenii integral'nykh uravneniy zadachi Stefana)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958, Nr 4, pp 202-214 (USSR)

ABSTRACT: In an earlier paper the author [Ref 1] reduced the solution of the one-dimensional Stephan's problem to a system of nonlinear integral equations of the type of Volterra and he proved the convergence of the integration method due to Piccard. In the present paper, by a combination of difference and iteration methods, the author shows by an example the numerical performance. The author chooses a very simple example, but he asserts that the amount of calculations in the most general case is about six times greater. The numerical solution was carried out without modern computing machines. There are 4 tables, and 7 references, 5 of which are Soviet, 1 American, and 1 French.

ASSOCIATION: Ufimskiy neftyanoy institut (Ufa Petroleum Institute)

SUBMITTED: February 26, 1958

Card 1/1

16(1), 10(4)

AUTHOR: Rubinshteyn, L.I.

SOV/140-59-1-17/25

TITLE: On a Case of Filtration of Two Weakly Compressible Fluids Through a Deformed Porous Medium (Ob odnom sluchaye fil'tratsii dvukh maloszhimayemykh zhidkostey cherez deformiruyemyu poristuyu sredu)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 1, pp 174-179 (USSR)

ABSTRACT: The author considers a filtration analogue to the Stefan reversion problem. Let the boundary between two fluid media be $x = y(t) \equiv \alpha t$. Let the pressure p_1 be defined by

$$(1) \quad \frac{\partial^2 p_1}{\partial x^2} = \frac{\partial p_1}{\partial t}$$

for $-\infty < x < \alpha t$, $t > 0$; $p_1 \Big|_{t=0} = 0$, $\frac{\partial p_1}{\partial x} \Big|_{x=\alpha t} = -\alpha$, $\lim_{x \rightarrow -\infty} p_1 = 0$.

Then p_2 satisfies the conditions

$$(2) \quad a^2 \frac{\partial^2 p_2}{\partial x^2} = \frac{\partial p_2}{\partial t}$$

Card 1/2

On a Case of Filtration of Two Weakly Compressible
Fluids Through a Deformed Porous Medium

SOV/140-59-1-17/25

$$\text{for } \alpha t < x; t > 0; p_2 \Big|_{x=\alpha t} = p_1 \Big|_{x=\alpha t}; \frac{\partial p_2}{\partial x} \Big|_{x=\alpha t} = \lambda \frac{\partial p_1}{\partial x} \Big|_{x=\alpha t} = -\lambda \alpha.$$

If α is given, then p_1 is uniquely determined by (1) and p_2 results from the Cauchy problem (2), where as a carrier of the Cauchy conditions there serves the straight line $x = \alpha t$. Solutions for p_1 and p_2 are given explicitly. In a short survey of similar investigations the author mentions the papers of M. Pudovkin [Ref 4], N. Verigin [Ref 5] and G.A. Martynov [Ref 6]. There are 8 references, 6 of which are Soviet, 1 German, and 1 French.

ASSOCIATION: Ufimskiy neftyanoy institut (Ufa Petroleum Institute)

SUBMITTED: March 10, 1958

Card 2/2

RUBINSHTEYN, L.I.

Integral magnitude of thermal losses in hot water injection
treatment of layers. Izv.vys.ucheb.zav.; neft' i gaz 2
no.9;41-48 '59. (MIRA 13:2)

1. Ufimskiy neftyanoy institut.
(Oil reservoir engineering)

RUBINSHTEYN, L. I. (Ufa)

"On the Heating and Melting of Solids Due to Friction."

"On the Temperature Field in a Layer Subjected to Injections of a Hot Incompressible Liquid."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

86033

S/020/6./135/003/012/039
B019/B077

11.9200

AUTHOR: Rubinshteyn, L. I.

TITLE: About Forced Convection in a Plane Layer When Axial Symmetry Exists

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 3, pp. 553 - 556

TEXT: In the first part the author investigates the following Cauchy problem

$$\frac{\partial^2 V}{\partial r^2} + \frac{1-2\nu}{r} \frac{\partial V}{\partial r} = \frac{\partial V}{\partial t}, \quad 0 < r < \infty; \quad V(r, 0) = \varphi(r), \quad 0 < r < \infty \quad (1,1)$$

and obtains the solution

$$V(r, t) = \int_0^\infty \varphi(q) E(r, q, t) q dq \quad (1,4)$$

He continues to show that the function E represents the temperature influence of an instantaneous cylindrical heat source. E can, therefore, be

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About Forced Convection in a Plane Layer When
Axial Symmetry Exists

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S/020/60/135/003/012/039
B019/B077

considered as basic solution of equation (1,1). A major portion of the paper is dedicated to prove that the solution of the differential equation

$$\frac{\partial^2 U}{\partial r^2} + \frac{1-2\nu}{r} \frac{\partial U}{\partial r} - \frac{\partial U}{\partial t} + F(r,t) = 0 \quad (1)$$

with the boundary conditions $U(r,0) = \varphi(r)$, $U(0,r) = f(t)$ (2)

can be written $U(r,t) = 2\nu \int_0^t f(\tau) E(r,0,t-\tau) d\tau + \int_0^\infty \varphi(q) E(r,q,t) q dq$

$+ \int_0^t d\tau \int_0^\infty F(q,\tau) E(r,q,t-\tau) q dq \equiv U_1 + U_2 + U_3$ if the following condition is

satisfied $\lim_{q \rightarrow 0} q \frac{\partial U}{\partial r} E(r,q,t-\tau) = 0$ with $r > 0$, $t - \tau > 0$ (2,2). There are

2 references: 1 Soviet and 1 US.

ASSOCIATION: Bashkirskiy gosudarstvennyy universitet Ufa (Bashkir State University, Ufa)

PRESENTED: June 17, 1960, by S. L. Sobolev, Academician

SUBMITTED: June 16, 1960

Card 2/2

89017

S/020/60/135/004/010/037
B019/B077

11,9200

AUTHOR: Rubinshteyn, L. I.

TITLE: A Problem of Thermal Contact Convection

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 4,
pp. 805 - 808

TEXT: A. N. Tikhonov (Ref. 1) was the first to point out the problem of thermoconvection problem which is investigated here, and is described by a set of differential equations:

$$\frac{\partial^2 U}{\partial r^2} + \frac{1}{r} \frac{\partial U}{\partial r} + \frac{\partial^2 U}{\partial z^2} = \frac{1}{a^2} \frac{\partial U}{\partial t}, \quad 0 < z < \infty, 0 < r < \infty, t > 0; \quad (1^1)$$

$$\frac{\partial^2 U}{\partial r^2} + \frac{1-2\nu}{r} \frac{\partial U}{\partial r} + \alpha \frac{\partial U}{\partial z} = \frac{\partial U}{\partial t}, \quad z = 0, 0 < r < \infty, t > 0; \quad (1^2)$$

$$U = 0, \quad 0 \leq z < \infty, 0 < r < \infty, t = 0; \quad (1^3)$$

$$U = T(t), \quad z = 0, r = 0, t > 0, \quad (1^4)$$

$$\lim_{z \rightarrow \infty} U = 0, \quad (1^5)$$

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A Problem of Thermal Contact Convection

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B019/B077

The authors obtained the solution by an integral transformation; they set:

$$V(r, z, p) = p \int_0^{\infty} e^{-pt} U(r, z, t) dt, \quad W(p) = p \int_0^{\infty} e^{-pt} T(t) dt \quad (2)$$

and obtain:

$$U(r, z, t) = \int_0^{\infty} J_0(rx) dx \frac{\partial}{\partial t} \int_0^{\infty} T(t-\tau) \Phi(x, z, t) d\tau \quad (16)$$

and the determination of the solution changes over to the function $\Phi(x, z, t)$. $J_0(z)$ is a Bessel function. For $\Phi(x, z, t)$ the following expression is obtained after some calculations:

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$$\bar{\varphi}(x, z, t) = \frac{1}{2\pi i} \int_{\sigma-i\infty}^{\sigma+i\infty} \exp\{pt - z(x^2 + p/a^2)\} f_1(x, p) \frac{dp}{p}, \quad z > 0 \quad (18)$$

The determination of $U(r, z, t)$ using (16) and (18) constitutes a formal solution of the problem. Since all operations are allowed for the determination of the solution $U(r, z, t)$ is also a real solution of the problem. It is finally shown that a solution of the non-steady problem changes over asymptotically into the solution of a steady problem. A. N. Tikhonov is thanked for a discussion. There are 4 references: 2 Soviet and 2 US. ✓

ASSOCIATION: Bashkirskiy gosudarstvennyy universitet im. 40-letiya
Oktyabrya (Bashkir State University imeni 40th Anniversary
of the October Revolution)

PRESENTED: June 17, 1960, by S. L. Sobolev, Academician

SUBMITTED: June 14, 1960

Card 3/3

163500

34768
S/140/62/000/001/009/011
C111/C444

AUTHOR: Rubinshteyn, L. I.
TITLE: On a two-laminated stationary thermoconvective problem
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika,
no. 1, 1962, 143-158

TEXT: The determination of the asymptotic distribution (for $t \rightarrow \infty$) of temperature in an infinitely deep lying seam of finite density, into which there is injected a hot heat support through a unit boring, leads to the problem

$$\frac{\partial^2 u_1}{\partial r^2} + \frac{1-2\nu}{r} \frac{\partial u_1}{\partial r} + \frac{\partial^2 u_1}{\partial z^2} = 0, \quad 0 < r < \infty, \quad -1 < z < 0, \quad (1_1)$$

$$\frac{\partial^2 u_2}{\partial r^2} + \frac{1}{r} \frac{\partial u_2}{\partial r} + \frac{\partial^2 u_2}{\partial z^2} = 0, \quad 0 < r < \infty, \quad 0 < z < \infty, \quad (1_2)$$

$$\frac{\partial u_1}{\partial z} \Big|_{z=-1} = 0, \quad u_1 \Big|_{r=1} = 1, \quad \lim_{r \rightarrow \infty} u_i = 0 \quad (i=1, 2; |z| \neq 0), \quad \lim_{z \rightarrow \infty} u_2 = 0, \quad (1_3)$$

$$u_1 \Big|_{z=0} = u_2 \Big|_{z=0}, \quad \lambda \frac{\partial u_1}{\partial z} \Big|_{z=0} = \frac{\partial u_2}{\partial z} \Big|_{z=0}. \quad (1_4)$$

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C111/C444

On a two-laminated stationary . . .

where $\nu > 0$, $\lambda > 0$ are given constants. If $(1_1) - (1_4)$ is solved by aid of integral transformation, one comes upon divergent integrals. Therefore the author substitutes the conditions (1_4) by

$$\left. \begin{aligned} \lim_{z \rightarrow -0} \int_0^r r_1 dr_1 \dots \int_0^{r_{n_1-1}} r_{n_1} u_1(r_{n_1}, z) dr_{n_1} &= \\ = \lim_{z \rightarrow +0} \int_0^r r_1 dr_1 \dots \int_0^{r_{n_1-1}} r_{n_1} u_2(r_{n_1}, z) dr_{n_1}, \\ \lim_{z \rightarrow -0} \lambda \int_0^r r_1 dr_1 \dots \int_0^{r_{n_2-1}} r_{n_2} \frac{\partial}{\partial z} u_1(r_{n_2}, z) dr_{n_2} &= \\ = \lim_{z \rightarrow +0} \int_0^r r_1 dr_1 \dots \int_0^{r_{n_2-1}} r_{n_2} \frac{\partial}{\partial z} u_2(r_{n_2}, z) dr_{n_2}, \end{aligned} \right\} (1_5)$$

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On a two-laminated stationary . . . S/140/62/000/001/009/011
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and investigates $(1_1) - (1_3), (1_5)$ under the assumption of $\nu > 0$ being integer. The equivalence of the two problems is not sufficiently founded. One puts $\nu = m, n_1 = m, u_2 = m+1$, and searches u_1 by the set-up

$$u_1(r, z) = u^*(r, z) + u(r, z), \quad (1.3)$$

where

$$u^*(r, z) = -\frac{4}{\pi} \sum_{k=1}^{\infty} \left(\frac{k\pi r}{4}\right)^{\nu} K_{\nu} \left(\frac{k\pi r}{2}\right) \frac{1-(-1)^k}{k\Gamma(\nu)} \sin \frac{k\pi z}{2} \quad (1.6)$$

and $K_{\nu}(z)$ being the Mac Donald function. For u and u_2 one uses the set-up

$$\left. \begin{aligned} u(r, z) &= \int_0^{\infty} r^{\nu} b(s) \operatorname{ch} [s(z+1)] J_n(rs) ds \\ u_2(r, z) &= \int_0^{\infty} a(s) e^{-sz} J_0(rs) ds \end{aligned} \right\} \quad (1.7)$$

$J_n(z)$ being the Bessel function of first kind. It is shown that $a(x)$ and $b(x)$ are connected by (1.10)

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C111/C444

$$\frac{2^{1-\nu} x^{-\nu}}{\Gamma(\nu)} \int_0^x a(s) (x^2 - s^2)^{\nu-1} ds = \frac{b(x) \operatorname{ch} x}{x} \quad (1.10_1)$$

and that $a(x)$ satisfies the equation

$$a(x) + \int_0^x a(s) R(x, s) ds = \phi(x) \quad (2.7)$$

where

$$R(x, s) = \frac{4\lambda\nu}{1 + \nu \operatorname{th} x} \sum_{m=1}^{\infty} \frac{\pi^2 \left(m - \frac{1}{2}\right)^2}{\left[\pi^2 \left(m - \frac{1}{2}\right)^2 + x^2\right]^2} \left(1 - \frac{x^2 - s^2}{\pi^2 \left(m - \frac{1}{2}\right)^2 + x^2}\right)^{\nu-1}, \quad (2.14_1)$$

$$\Phi(x) = \frac{4\lambda\nu}{1 + \nu \operatorname{th} x} \sum_{m=1}^{\infty} \frac{1}{\pi^2 \left(m - \frac{1}{2}\right)^2 + x^2} \left(1 - \frac{x^2}{\pi^2 \left(m - \frac{1}{2}\right)^2 + x^2}\right)^{\nu}. \quad (2.14_2)$$

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On a two-laminated stationary . . .

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C111/C444

The author mentions O. A. Oleynik.

There are 9 Soviet-bloc and 3 non-Soviet-bloc references and one figure.

The 3 references to English-language publications read as follows:
H. A. Lauweries. The transport of heat in a oil layer by the injection
of hot fluid. Appl. Sci. Res., A5, no. 2-3, 145-150, 1955; A. Erdelyi,
F. Oberhettinger, W. Magnus, F. G. Triкоми. Higher Transcendental
Functions. V. 2, p. 92-93, New York, 1953; G. N. Watson. Theory of
the Bessel functions, v. 1, p. 730, ILL., M 1949.

4

Card 5/5

16.3500

34746

S/020/62/142/003/012/027

B112/B102

AUTHOR: Rubinshteyn, L. I.

TITLE: A variant of Stefan's problem

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, 576-577

TEXT: It is demonstrated that the boundary value problem

$$a^2 \frac{\partial^2 u}{\partial x^2} + F(x, t, u, \frac{\partial u}{\partial x}, y, \dot{y}) = \frac{\partial u}{\partial t}, \quad \frac{\partial u}{\partial x} \Big|_{x=0} = f(t, u) \Big|_{x=0},$$

$$u(x, 0) = \varphi(x), \quad u(y(t), t) = \psi(y(t)), \quad \frac{dy}{dt} = \Phi(t, u, \frac{\partial u}{\partial x}, y) \Big|_{x=y}, \quad y(0) = 1 > 0$$

is equivalent to the following system of integral equations:

$$\begin{aligned} u = & -a^2 \int_0^t f(\tau, w) G(x, 0, t - \tau) d\tau + \int_0^t \varphi(\xi) G(x, \xi, t) d\xi + \\ & + \int_0^t d\tau \int_0^{y(\tau)} F(\xi, \tau, \dots) G(x, \xi, t - \tau) d\xi + \\ & + a^2 \int_0^t [v(\tau) + \psi(y(\tau)) z(\tau)] G(x, y(\tau), t - \tau) d\tau \end{aligned}$$

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A variant of Stefan's problem

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B112/B102

$$-a^2 \int_0^t \psi(y(\tau)) \frac{\partial}{\partial \xi} G(x, y(\tau), t-\tau) d\tau \equiv U(t, x|u, w, q, v, y, z); \quad (4)$$

$$w = U|_{x=0};$$

$$q(x, t) = a_1^2 \int_0^t f(\tau, w) \frac{\partial}{\partial \xi} g(x, 0, t-\tau) d\tau + \int_0^t \dot{\psi}(\xi) g(x, \xi, t) d\xi -$$

$$- \int_0^t d\tau \int_0^{y(\tau)} F(\xi, \tau, \dots) \frac{\partial}{\partial \xi} g(x, \xi, t-\tau) d\xi - a^2 \int_0^t v(\tau) \frac{\partial}{\partial \xi} g(x, y(\tau), t-\tau) d\tau +$$

$$+ \int_0^t \dot{\psi}(y(\tau)) z(\tau) g(x, y(\tau), t-\tau) d\tau \equiv Q(t, x|u, w, q, v, y, z);$$

$$v(t) = 2Q|_{x=y(t)}; \quad y(t) = l + \int_0^t z(\tau) d\tau; \quad z(t) = \Phi(t, \psi(y), v, y).$$

The Green functions g and G are defined as follows:

$$g(x, \xi, t) = E(x-\xi, a^2 t) - E(x+\xi, a^2 t);$$

$$G(x, \xi, t) = E(x-\xi, a^2 t) + E(x+\xi, a^2 t); \quad E(x, t) = \frac{e^{-x^2/4t}}{2\sqrt{\pi t}}.$$

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A variant of Stefan's problem

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B112/B102

Theorems concerning the approximability and the stability of the solutions of the system (4) are derived. There is 1 Soviet reference.

ASSOCIATION: Vychislitel'nyy tsentr Latviyskogo gosudarstvennogo universiteta im. Petra Stuchki (Computer Center of Latvian State University imeni Petra Stuchki)

PRESENTED: October 16, 1961, by S. L. Sobolev, Academician

SUBMITTED: September 27, 1961

Card 3/3

3/020/62/142/005/013/022
B104/B102

AUTHOR: Rubinshteyn, L. I.

TITLE: Heating and melting of a solid by friction

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 5, 1962,
1061 - 1064

TEXT: S. S. Grigoryan (Prikl. matem. i mekh., 22, no. 5 (1958)) studied simulator solutions for the heating and melting of a solid rapidly flown round by a viscous liquid. The same problem is studied without restriction to simulator solutions by methods previously developed by the author (DAN, 142, no. 2, 1962). The problem is reduced to a system of nonlinear Volterra functional equations. The system is solved by iteration. There are 4 Soviet references. ✓

ASSOCIATION: Vychislitel'nyy tsentr Latviyskogo gosudarstvennogo universiteta im. Petra Stuchki (Computer Center of the Latvian State University imeni Petra Stuchki)

~~Secret 1/2~~

RUBINSHTEYN, L.I.

Uniqueness of the solution to a two-layer single-phase Stefan type problem. Dokl. AN SSSR 160 no. 1:1019-1022 F '65. (MIRA 18:2)

1. Leningradskiy gosudarstvennyy universitet im. Petra Stuchki. Submitted September 21, 1964.

L 9023-65 EWT(d)/EWT(1)/EFP(n)-2 Pu-1 IJP(c)/ASD(r) WW

ACCESSION NR: AR4043046

S/0044/64/000/006/B078/B079

SOURCE: Ref. zh. Matematika, Abs. 6B404

AUTHOR: Rubinshteyn, L. I.

TITLE: On a variant of the one-component Stefan problem with intensified nonlinearity

CITED SOURCE: Uch. zap. Latv. un-t, v. 47, 1963, 163-218

TOPIC TAGS: Stefan problem, one component Stefan problem, intensified nonlinearity, free phase separation boundary, mobile surface irradiation, radiation absorption, boundary value, Volterra integral equation, iterative difference process, phase

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ACCESSION NR: AF4043046

irradiated medium. The boundary value problem under study is reduced to a system of integral equations of the Volterra type with weak specificity; the existence and uniqueness of the solution of the reduced system is proved in details. as is

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SUB CODE: MA

ENCL: 00

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APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R001445820010-6"

ZAK, Grigoriy Gavrilovich; RUBINSHTEYN, Lev Iosifovich; GORANSKIY,
G.K., kand. tekhn. nauk, red.; BARABANOVA, Ye., red. izd.-
va; VOLOKHANOVICH, I., tekhn. red.

[Machinery designer's handbook] Spravochnik konstruktora
(mashinostroitelia). Minsk, Izd-vo Akad. nauk BSSR, 1963.
567 p. (MIRA 16:5)

(Machinery--Design and construction)

41671

S/020/62/146/005/004/011
B112/B186

41200

AUTHOR:

Rubinstein, L. I.

TITLE:

Asymptotic behavior of the solution to a contact axially symmetrical thermoconvective problem with high values of the convective parameter

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 5, 1962, 1043-1046

TEXT: The boundary value problem

$$\frac{\partial^2 u}{\partial r^2} + \frac{1}{r} \frac{\partial u}{\partial r} + \frac{\partial^2 u}{\partial z^2} = \frac{1}{\alpha^2} \frac{\partial u}{\partial t}; \quad 0 < r < \infty; \quad 0 < z < \infty; \quad t > 0; \quad (1)$$

$$\frac{\partial u}{\partial r^2} + \frac{1-n}{r} \frac{\partial u}{\partial r} + \alpha \frac{\partial u}{\partial z} = \frac{\partial u}{\partial t}; \quad 0 < r < \infty; \quad z = 0; \quad t > 0.$$

$$u|_{t=0} = 0; \quad u|_{r^2+z^2 \rightarrow \infty} = 0; \quad \lim_{r \rightarrow 0} \lim_{z \rightarrow 0; t > 0} u = 1.$$

is solved by a series

$$u = \sum_{j=0}^{\infty} u_j n^{-j}, \quad (13)$$

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where the functions u_j are solutions of the boundary value problems

$$\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{1}{y} \frac{\partial}{\partial y} - \frac{\partial}{\partial \tau}\right) u_i = 0; \quad x > 0; \quad y > 0; \quad \tau > 0; \quad (12)$$

$$\left(\frac{\partial}{\partial x} - \frac{1}{y} \frac{\partial}{\partial y}\right) u_i + \psi_i = 0; \quad x = 0; \quad y > 0; \quad \tau > 0; \\ u_i|_{\tau=0} = 0; \quad u_i|_{x^2+y^2 \rightarrow \infty} = 0; \quad u_i|_{x=y=0; \tau>0} = \Psi_i; \quad i = 0, 1, 2, \dots; \quad (12^*)$$

$$\psi_0 \equiv 0; \quad \Psi_0 \equiv 1; \quad \psi_i = \left(\frac{\partial^2}{\partial y^2} + \frac{1}{y} \frac{\partial}{\partial y} - a^2 \frac{\partial}{\partial \tau}\right) u_{i-1}; \quad \Psi_i \equiv 0, \quad i = 1, 2, \dots$$

The case $a^2 = 1$ has been considered in earlier papers (DAN, 135, No. 4 (1960); Uch. zap. Kazansk. gos. univ., 121, kn. 5, 129 (1961)). The sequence u_m is transformed into a sequence w_m which satisfies the recursive relations

$$w_0 = (p + s^2)^{-1/2} \exp[\sqrt{p} - (1+x)\sqrt{p+s^2}]; \quad (14)$$

$$w_{m+1} = w_0(p, s) \int_0^s \frac{\lambda^2 + a^2 p}{\lambda^2 + p} \frac{w_m(p, \lambda)}{w_0(p, \lambda)} \lambda d\lambda - \frac{s^2 + a^2 p}{\sqrt{p+s^2}} w_m(p, s); \quad (15)$$

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The function u_1 is found to be

$$u_1 = \left[\frac{\partial x}{\partial x} - \frac{1}{2} \left(\frac{\partial^2}{\partial y^2} + \frac{1}{y} \frac{\partial}{\partial y} \right) \right] u_0 - (a^2 - 1) \frac{\partial}{\partial \tau} \int_x^\infty u_0(\xi, y, \tau) d\xi + \quad (19).$$

$$+ \frac{a^2 - 1}{2} \frac{\partial}{\partial \tau} \int_0^\tau \frac{d\lambda}{\lambda} \left[u_0(x, y, \tau - \lambda) - \int_0^\infty u_0(x, \eta, \tau - \lambda) \frac{\exp[-(y^2 + \eta^2)/4\lambda]}{2\lambda} I_0\left(\frac{y\eta}{2\lambda}\right) \eta d\eta \right].$$

f

The convergence of the series (13) is not proved.

ASSOCIATION: Latviyskiy gosudarstvennyy universitet im. P. Stuchki
(Latvian State University imeni P. Stuchki)

PRESENTED: May 21, 1962, by S. L. Sobolev, Academician

SUBMITTED: May 3, 1962

Card 3/3

RUBINSHTEYN, L.I.

Variety of Stephan's problem. Dokl. AN SSSR 142 no.3:576-577
Ja '62. (MIRA 15:1)

1. Vychislitel'nyy tsentr Latviyskogo gosudarstvennogo universiteta
im. Petra Stuchki. Predstavleno akademikom S.L.Sobolevym.
(Integral equations)

RUBINSHTEYN, L.I.

Heating and melting of a solid due to friction. Dokl. AN
SSSR 142 no.5:1061-1064 F '62. (MIRA 15:2)

1. Vychislitel'nyy tsentr Latviyskogo gosudarstvennogo
universiteta im. Petra Stuchki. Predstavleno akademikom
S.L.Sobolevym.

(Friction)

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H MAGYAR TECHNIKA — HUNGARIAN ENGINEERING 36 1950 No. 10, Oct.																																																			
M. Rubinstein 378 (035.7) The militarization of American universities (Translated from the Russian). pp. 65 67																																																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION E-2																																																			

RUBINSHTEYN, L. M.

Abstracts and Index. Institute Metallurgii imeni A.A. Bogdanov	607/5175
Deviations in the strength of materials. Proceedings of the Conference on Fatigue of Metals, September 25-26, 1960. Moscow, 1960. 157 p. 3,500 copies printed.	
Step, R.I. I.A. Orling, Corresponding Member, Academy of Sciences USSR; R.I. of Publishing House: A.S. Chernov, Tech. Ed.: I.M. Doroshkin.	
PREFACE: This collection of articles is intended for mechanical engineers, metallurgists, and scientific research workers.	
CONTENTS: The collection contains discussions relating to fatigue failure of metals, fatigue in finished parts, and methods for testing resistance to fatigue. It includes a critical review of existing theories on the fatigue of metals, physical regularities of fatigue, and methods for increasing the notch sensitivity of metals. The collection also contains a review of the mechanism of fatigue due to notches and stress concentrations, and a review of the mechanism of fatigue due to corrosion. The collection is divided into two parts: the first part contains articles on the physical regularities of fatigue, and the second part contains articles on the mechanism of fatigue.	
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RUBINSHTEYN, L.O.

Measuring the rigidity of automatic multispindle rod-cutting
machine. Stan. i instr. 34 no.12:21-23 D '63. (MIRA 17:11)

PROCESSING AND PROPERTY INDEX																																							
B The application of platinum and palladium in the laboratories, by A. M. Rubinstein. Acad. Sci. U.S.S.R. Inst. Gen. Chem. Annals, Part 19, 1943, p. 45. Branches of industry using the metals of the platinum group; the use of platinum and palladium in industrial chemistry; as alloys for laboratory apparatus, in the form of salts, as catalysts.																																							
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11F The spleen and experimental hyperthermia. M. Rubinstein. <i>Med. Dehydracalia i Spoleczno</i> 10, 91-113 (1934); cf. C. A. 27, 3743. Exptl. hyperthermia was induced by 2,4-dinitrophenol (I) in doses of 0.01 g./kg. of dog. Splenectomy lowered or diminished the fever response to I. Cutting off the circulation to the spleen gave the same result as splenectomy. The glutathione content (detd. by Kühnau's method) of the spleen in febrile dogs was lowered to 69.9% of the normal. The alk. reserve of the blood was lowered with a simultaneous increase in the red blood cell Cl (the ratio blood cell Cl/plasma Cl = 0.5-0.48). The Cl and alkali reserve were detd. by the methods of Laudat and Van Slyke, resp. Alk. solns. of I induced a more intense fever than neutral solns. Expts. in which the isolated spleen of a normal animal was supplied with the blood of the febrile animal did not permit definite conclusions. C. T. Ichniowski																																																			
ASB-3LA METALLURGICAL LITERATURE CLASSIFICATION																																																			

RUBINSHTEYN, M.																									
CA													15A												
Insecticides made from <i>Anacyclus pyrethrum</i>. M. Rubinshteyn, <i>Farmlitsya</i> 7, No. 3, 31.5 (1944). An <i>ale</i> pyrethrum infusion, a pyrethrum dust, and a pyrethrum ointment are used as insecticides. The infusion and the ointment proved to be very effective in the treatment of mange in horses. After treatment, the horses showed no signs of itching, and their hair started to grow again. No after-effects were observed. S. G. M.																									
ASP-SLA METALLURGICAL LITERATURE CLASSIFICATION																									
REGIONAL INDEX																									
STANDARD INDEX																									

RUBINSHTEYN, L.I.

Two-layer steady-state thermal convection problem. Izv. vys.
ucheb. zav.; mat. no.1:143-158 '62. (MIRA 15:1)
(Thermodynamics)

RUBINSHTEYN, M.I.

Decomposition rate of organic matter in reclaimed Chernozems
of North Kazakhstan. Pochvovedenie no.11:89-92 N '59.
(MIRA 13:4)

1. Institut zemledeliya Kazakhskoy akademii sel'skokhozyay-
stvennykh nauk.
(North Kazakhstan Province--Chernozem soils)

RUBINSHTEYN, M.I.

Work of the Kazakh Branch of the All-Union Society of Soil
Scientists in 1958. Pochvovedenie no.10:122-123 0 '59.
(MIRA 13:2)

(Kazakhstan--Soil research)

RUBINSHTEYN, M.I.

Kazakh Branch of the All-Union Society of Soil Scientists.
Pochvovedenie no.4:119-120 Ap '58.

(MIRA 11:5)

(Kazakhstan--Soil research)

J-3

USSR / Soil Science. Biology. of Soils.

Abs Jour: Ref Zhur-Biol., No 8, 1958, 34364.

Author : Rubinshteyn, M. I.

Inst : Institute of Soil Sciences, AS KazSSR.

Title : Change of Organic Matter and Structure in Southern Black Earth Under Conditions of Field Crop Rotation.

Orig Pub: Tr. In-ta pochvoved. AN KazSSR, 1956, 6, 196-208.

Abstract: During 1950 and 1952 at the Shortandy Experiment Station of the Akmolinskaya Oblast, observation work was carried out on carbonaceous black earth of heavy-argillaceous mechanical composition. Under csparecto-herbacous grass mixture, the accumulation in the soil of overall C and humic acids was observed in the second year of grass

Card 1/3

USSR / Soil Science. Biology of Soils.

J-3

Abs Jour: Ref Zaur-Biol., No 8, 1958, 34364.

Abstract: utilization; at the same time, the regeneration of humic matters was proceeding, for the large part, at the expense of humic and ulmic acids. Humates from soil, occupied by grass, with one and the same concentration of electrolyte (of solution CaCl_2), coagulated slower than humates from soil of a fallow field.

Accumulation in the soil of primary particles, colloids of which were coagulated by bi-valence cations, was dependent on the young crop of perennial grass. Aggregates of 3-5 mm from field stratum contained 0.57% more C and 8% more humic acids, as compared with the aggregates of the same size, but from a fallow field. Content of water-solid aggregates, after perennial grass,

Card 2/3

RUBINSITEYN, M. I.

RUBINSITEYN, M. I. -- "Aspects of the Decomposition of Organic Substances and Structure Firmation in the Low-Humus Carbonate Chernozems of Northern Kazakhstan under Agricultural Use." Sci Res Inst of Farming imeni Academician V. R. Vil'yans, Kazakh Affiliate, VASKhNIL. Alma-Ata, 1956.
(Dissertation for the Degree of Candidate in Agricultural Sciences).

SO: Knizhnaya Letopis', No 9, 1956

PACHIKINA, Lyubov' Ivanovna; RUBINSHTEYN, Mikhail Issakovich;
STOROZHENKO, D.M., otv.red.vypuska; BEZSONOV, A.I., otv.red.;
BOROVSKIY, V.M., red.; SOKOLOV, A.A., red.; SOKOLOV, S.I., red.;
USPANOV, U.U., red.; POGOZHEV, A.S., red.; ROROKINA, Z.P.,
tekhn.red.

[Soils of Kazakhstan in 16 volumes] Pochvy Kazakhskoi SSR v 16
vypuskakh. Alma-Ata. Vol.2. [Soils of Kokchetav Province]
Pochvy Kokchetavskoi oblasti. 1960. 135 p. (MIRA 13:8)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut pochvove-
deniya.

(Kokchetav Province--Soils)

RUBINSHTEYN, M.I.; OTAROV, G.O.; Prinimala uchastiye: ZENKOVA, Ye.M.

Moisture conditions of the dry Sierozems in southern Kazakhstan.
Pochvovedenie no.4:36-43 Ap '64. (MIRA 17:10)

1. Kazakhskiy nauchno-issledovatel'skiy institut zemledeliya.

RUBINSHTEYN, M. I.

"The connection between the economic problems of developing countries and international security."

Report presented at the Pugwash, 12th Conference, Udaipur, near New Delhi, India, 27 Jan- 1 Feb 64.

GLAGOLEV, Igor' Sergeyevich; RUBINSHTEYN, M.I., doktor ekon. nauk,
otv. red.

[Effect of disarmament on the economy; militarization
and the possible results of disarmament] Vliianie razo-
ruzheniia na ekonomiku; militarizatsiia i vozmozhnye
posledstviia razoruzheniia. Moskva, Nauka, 1964. 126 p.
(MIRA 18:1)

RUBINSHTEYN, M.I., prof.

Science and peace. Priroda 53 no.5:3-7 '64. (MIRA 17:5)

RUBINSHTEYN, M

I

EPP
.R92995

O SOZDANII MATERIAL'NO - TEKHNIЧЕСКОY BAZY KOM'UNIZMA. MOSKVA, IZD-VO ZNANIYE,
1952.

37 P. (VSESOUZNOYE OBSHCHESTVO PO RASPROSTRANENIYU POLITICHESKIKH I NAUCHNYKH
ZNANIY. 1952, SERIYA 2, NO. 48)

RUSSIA

ZENTSOVA, A.I.; RUBINSHTEYN, M.I., redaktor.

[Cuba] Kuba. Pod red. M.I. Rubinshteina. Moskva, Gos. izd-vo
geogr. lit-ry, 1952. 36 p. (MLRA 7:5)
(Cuba)

ARTOBOL'EVSKIY, I.I., akademik; KUDRYAVTSEV, P.S., prof.; OGORODNIKOV, K.F.,
 prof.; RZHONSNITSKIY, B.N., kand. tekhn. nauk; DOROGOV, A.A., kand.
 tekhn. nauk; VASIL'YEV, I.G., kand. tekhn. nauk; ISLAMOV, O.I., kand.
 geol.-miner. nauk; LEONOV, N.I., prof.; RADKEVICH, Ye.A., doktor geol.-
 miner.nauk; KUZNETSOV, B.G., prof.; MARIYENBAKH, L.M., prof.;
 RUBINSHTEYN, M.I., prof.; KALMYKOV, K.F., kand. biol. nauk;
 KONFEDERATOV, I.Ya., prof.; KOZLOV, A.G.; ZUBOV, V.P., prof.;
 IMSHINETSKIY, A.A.; DORFMAN, Ya.G., prof.; SHUKHARDIN, S.V., kand.
 tekhn.nauk; KEDROV, B.M., prof.; DANILEVSKIY, V.V., akademik; SHATSKIY,
 N.S., akademik; BYKOV, K.M., akademik.

Speeches. Vop. 1st. est. 1 tekhn. no.6:111-141 '59.
 (MIRA 12:6)

1.Chlen-korrespondent AN SSSR (for Imshinetskiy). 2. AN USSR
 (for Danilevskiy).
 (Science) (Technology)

RUBINSHTEYN, M. I.

"Science in the Aid of Developing Nations"

report presented at the 10th Pugwash Conference, London, 2-7 Sep 61.

RUBINSHTEYN, MODEST Iosifovich

SHEYNIN, Yulian Mikhaylovich; RUBINSHTEYN, M.I., doktor ekon. nauk,
otv. red.; LAVRUKHINA, I.M., red.; ASTAF'YEVA, G.A.,
tekh. red.

[Science and militarism in the U.S.A.; scientific and
technological revolution in military art and the origina-
tion of conditions for the crisis of militarism] Nauka i
militarizm v SShA; nauchno-tekhnicheskii perevorot v voen-
nom dele i vozniknovenie predposylok krizisa militarizma.
Moskva, Izd-vo AN SSSR, 1963. 590 p. (MIRA 16:12)
(United States--Military art and science)
(United States--Militarism)

RUBINSHTEYN, M.M.

DECEASED 1956

Pharmacology

see ILC

RUBINSHTEIN, M. M.

23928 RUBINSHTEIN, M. M. Seysmichnost' Gruzii v svyazi s yeye geotektonicheskim stroyeniym. Soobshch. Akad. Nauk Gruz. SSR, 1949, No. 3, S. 145-50. Bibliogr: 10 Nazv.

SO: Letopis, No. 32, 1949.

GVAKHARIYA, G.V.; RUBINSHTEYN, M.M., redaktro; TODUA, A.R., tekhnicheskii
redaktor

[Zeolites of Georgia] Tseolity Gruzii Tbilisi, Izd-vo Akademii nauk
Gruzinskoi SSR, 1951. 248 p. (Akademiia nauk Gruzinskoi SSR, Tiflis.
Institut geologii i mineralogii. Monografii no.3) (MLRA 8:12)
(Georgia--Zeolites)